

W5YI

America's Oldest Ham Radio Newsletter REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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The 1998 Amateur Radio Year in Review!

Every year about this time we pause to reflect on what has happened to Amateur Radio during the past 12 months. Being tied to technology trends, ham radio is naturally always changing. And 1998 was no exception! Here are what we feel are the major stories of the past year.

JANUARY 1998:

- As the year began, two major rulemaking proceedings still were awaiting action by the Commission. WT Docket 96-188 looked toward "Authorization of Visiting Foreign Amateur Operators to Operate Stations in the United States" and WT 97-12 wants to "Provide Greater use of Spread Spectrum Communication technologies in the Amateur Radio Services." These proceedings would allow citizens of certain countries in Europe and the Americas to operate amateur radio stations while on short visits to the United States ...and permit amateur stations to transmit spread spectrum ("SS") emission technologies using additional spreading sequences.
- The year also started off with four brand new FCC Commissioners. For the first time, 80% (four out of five) of the Commission was changed at once. Only Susan Ness was a carry-over from the previous regime. President Clinton named Bill Kennard as FCC Chairman. He had been the FCC's General Counsel for the past four years. Joining him on the commission were economist Harold Furchtgott-Roth, anti-trust lawyer Michael Powell, and New Mexico attorney Gloria Tristani.

- The FCC began activating their new web-browser-based *Universal Licensing System (ULS)* which consolidates 11 different licensing systems into one.
- Unlicensed low power FM pirate radio was gaining momentum. The goal of microbroadcasters was to flood the U.S. with low power radio stations ...so many that would overload the FCC's enforcement ability and force the Government to make a decision on their right to operate. The FCC vowed to close the illegal stations down.
- Gate No. 4 of the Vanity Call Sign System opened in December 1997 and the FCC began receiving hundreds of requests for new call signs from General, Tech Plus, Technician and Novice Class operators who could now request a new Group C (1-by-3 format) or Group D (2-by-3) call sign.
- As of January 1, 1998, all amateur radio licensees were expected to routinely evaluate their stations for potential excessive human exposure to RF fields. Ham stations would now be required to take corrective action if the evaluation showed that the station was radiating energy above the maximum permissible exposure (MPE) guidelines.
- Amateur operators responded quickly and effectively in the aftermath of a major ice storm that devastated portions of Maine, New York, Vermont and new Hampshire in mid-January.
- After 89 years, the United Kingdom's Coast Guard joined that of the U.S. in saying farewell to CW operations. Effective January 1, 1998, Great

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Britain no longer would require the British maritime radio services to maintain a 500 kHz distress watch.

- At WRC-97 in Geneva, two ham radio issues that were to be taken up at WRC-99 were taken off "...due to a very crowded agenda." The possible realignment of the 40 meter band to resolve a conflict between ham radio and short-wave broadcasting and consideration of Article S25 — the Amateur Radio Service regulations including the Morse code requirement for operation below 30 MHz — will now not be taken up until WRC-2001.

- As a result, at their January 16-17, 1998 annual meeting, the ARRL Directors voted not to petition the FCC to restructure the Amateur Service or to reduce the number of license classes or Morse code examination speeds. This vote ended the Board's consideration of its WRC-99 planning committee proposal which recommended that the U.S. Amateur Service be restructured.

- Effective January 30th, amateurs in the United Kingdom were allocated a new LF (low frequency) ham band at 136 kHz.

FEBRUARY 1998:

- Amateur station 8NO0WOG began operations on February 7th at the 1998 Winter Olympic Games in Nagano, Japan.

- Canadian amateurs were advised that *Industry Canada*, their telecommunications regulatory agency, were looking into the possibility of regulating amateur radio operators without the use of radio station licenses.

- On February 5th, the FCC released a list of 31 proposed initiatives that would be explored as part of the 1998 Biennial Regulatory Review. This review seeks to eliminate or modify regulations that are overly burdensome or no longer serve the public interest. One of the initiatives involved simplification and streamlining of the Amateur Service.

- The FCC began taking a hard look at amateur radio transmitting equipment that can be modified or reprogrammed to receive non-amateur bands ...especially cellular telephone frequencies.

- The FCC adopted WT Docket 98-20 "To Facilitate the Development and Use of the Universal Licensing System" on February 18th. The NPRM proposed to do away with the Amateur Service's FCC Form 610 and replace it with a new general purpose FCC Form 605. Schedule "C" of that form would apply the amateur radio operators. It also proposed to discontinue issuing reciprocal operator permits to visiting foreign amateurs and authorize all reciprocal operation by rule.

MARCH 1998:

- In response to two petitions, the FCC agreed to examine "microstations." One petition proposed a *Microstation Radio Broadcasting Service (MRBS)*; the other, a *Low Power FM Broadcasting Service (LPFM)*. The two petitions were from Extra Class amateur radio operators:

Nickolaus Leggett N3NL and Rodger Skinner, W4FM. These services would respond to the need for low power hobby, special event and community radio broadcasting stations.

- A meeting was held in Washington, DC between the FCC's *Public Safety and Private Wireless Division* and top ARRL officials — including League president Rod Stafford, W6ROD. At that meeting, the league was told that the Commission was thinking about reducing all Morse code examination speeds to 5 WPM as a way to eliminate the need to grant waivers of the high speed telegraphy examinations to the handicapped.

- On March 25th, the FCC's *Office of Managing Director* said that it would be reducing the cost of an amateur "Vanity" station call sign from an annual fee of \$5 to \$1.29. That meant that the previous \$50 cost for a full ten year term Vanity Call Sign would be reduced to \$12.90.

APRIL 1998:

- The FCC began stepped up enforcement action against low power unlicensed FM microbroadcasters. On April 6th, a presentation was made on behalf of micro radio at the 1998 convention of the National Association of Broadcasters.

- On April 3rd, the ARRL filed a 15-page *Request for Declaratory Ruling* asking that the FCC acknowledge that band plan compliance parallels good amateur practice. Instead, the FCC treated the document as a *Petition for Rulemaking* and on April 21st asked for public comment. The comments overwhelmingly opposed the League's proposal.

MAY 1998:

- Nearly 30,000 amateurs made their annual pilgrimage May 15-17 to the Dayton Hamvention, the nation's largest hamfest. Attendance was down considerably over prior years. The FCC announced at their forum that the 1998 Biennial Review of regulations would include a review of Amateur Service rules including the license structure, number of license classes and the heavy reliance on Morse code proficiency.

- On May 29th, Barry Goldwater, K7UGA died of natural causes at his home in Paradise Valley, Arizona.

JUNE 1998:

- Based on a *Petition* from Uniden America Corp., the FCC proposed rules to prevent illegal eavesdropping of cellular phone calls and included regulations applying to radio kits and mandatory "potting" (sealing) of radio circuits.

JULY 1998:

- AMSSAT's Phase 3-D amateur satellite is bumped from a scheduled Ariane 503 launch and it is now unknown just when it will fly.
- The VECs held their annual conference with the FCC in Gettysburg and are told by Private Wireless

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Division Chief, D'wana Terry that the FCC is indeed looking at a reduction in the Morse code examination speed as a way around the need to grant code waivers, but that "...nothing is carved in concrete."

● Seeing the handwriting on the wall, on July 22nd the ARRL did an about-face and proposed a simplified amateur license structure to the FCC. In a letter to the Commissioners, the League recommended four license classes (which they called A, B, C and D) and two Morse code exams at 5 and 12 WPM. *No Code International* also wrote the Commissioners and suggested three license classes (Technician, General and Extra) and one code speed (5 WPM) which would meet the international treaty requirement for Amateur HF operation.

AUGUST 1998:

● On August 10th, the FCC released a 33-page *Notice of Proposed Rule Making* (WT 98-143) which advocated reducing the number of license classes from 6 to 4, would permit Advanced Class licensees to be a VE for the General Class, and would eliminate RACES (Radio Amateur Civil Emergency Service) station licenses. The Commission also asked for input on how to improve the Amateur Service enforcement process and solicited possible changes to the telegraphy and written examinations. The FCC asked that comments be filed using their new on-line ECFS (*Electronic Comment Filing System*.)

● On August 31st, the FCC issued a 13 page Errata due to several errors in the NPRM. The errors were caused by the necessity for the Private Wireless Division to rewrite the originally submitted NPRM since the Commissioners felt it was important that the Amateur community comment on various issues (such as Morse code testing speeds) prior to proposing new rules.

SEPTEMBER 1998:

● Effective September 14, 1998, the fee for an amateur "Vanity" station call sign was reduced to \$13.00. (The originally proposed \$12.90 was rounded off.) Requests for "Vanity" call signs may be requested interactively using a Web browser ...or a paper FCC Form 610-V document may be filed.

On September 17th, the FCC adopted an Order (which ran to over 500 pages!) to implement the *Universal Licensing System*. (ULS). The FCC affirmed their proposal to permit certain foreign amateurs to operate their equipment in the U.S. by rule ...and to use call sign administrators to handle club and military recreation call signs. The new FCC Form 605 (and its accompanying Schedule "C") was approved and it is expected that the new ULS system and Form 605 will begin in Spring 1999.

● Meeting in Venezuela, the Region 2 IARU (*International Amateur Radio Union*) agreed that there should be no reduction in the current minimum international requirements for an Amateur Radio license. The IARU suggested that the technical and operational qualifications be a

"mandatory recommendation" rather than a regulation.

OCTOBER 1998:

● On October 1st, FCC Chairman Bill Kennard said that there was a need to reorganize the FCC again along functional lines. The FCC was last restructured in 1995. Dale Hatfield, W0IFO was brought in as the Chief Technologist to oversee the Office of Engineering and Technology. Most of the reorganization will be delayed until next year ...after the Commission completes their move to "The Portals" ...a new office building in southwest Washington, DC.

● On October 1st, the VECs filed their comments on WT 98-143 stating that the Amateur Service should contain three license classes conferred by only four examinations. The new classes would correspond to Technician, General and Extra Class. The VEC's proposal would phase out the Novice and Advanced Class which could be indefinitely renewed ...but no new Novice and Advanced Class licenses would be issued. The Tech Plus Class would be abolished, but code credit for 5 WPM would be retained. A maximum code speed of 5 WPM would meet the international treaty requirement and eliminate the need for waivers of the high speed code examinations.

● The FCC transferred the responsibility for Amateur Service enforcement from the *Wireless Telecommunications Bureau* (WTB) to the *Compliance and Information Bureau* (CIB.) The CIB effort will be headed up by FCC's Riley Hollingsworth, K4ZDH. The impact was almost immediate with several violators being cited, fined and dealt with very harshly.

NOVEMBER 1998:

● Comments on the FCC's plan to restructure the Amateur Service poured into the FCC during September, October and November. By the end of November nearly 2,000 comments from amateur Radio operators had been posted to the FCC's *Electronic Comment Filing System* (ECFS). You can read them by accessing the ECFS Web site at <<http://www.fcc.gov/e-file/ecfs.html>>. The results were predictable. Amateurs that had passed 20 WPM wanted no change in the code speeds. Technician Class and slow code proficient amateurs believed that 5 WPM should be the highest speed tested.

● The ARRL petitioned the FCC to create two low-frequency all-mode allocations at 136 and 160 kHz.

DECEMBER 1998:

● The ARRL filed their comments on December 1st. They wanted four license classes that correspond to the Technician, General, Advanced and Extra Class (...a change from their originally proposed Class A, B, C and D names.) Technician would continue to be a "No Code" VHF/UHF/Microwave class. The HF entry level would become the General Class with a 5 WPM code requirement. The Advanced and Extra Class would require 12 WPM telegraphy proficiency.

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The most pressing problem facing the U.S. amateur Service is lack of growth. The following tables show the number of amateurs in the FCC database over a 20 year period ...and the number of amateurs by license class and state. (These figures also include amateurs whose license has expired but still in the 2 year grace period.) Twenty years ago, two-thirds of all amateurs were General Class

and higher. Today, 57% of all amateurs hold slow (5 WPM) or "no code" tickets. There were no renewals or expired licenses in the 5 year period (see box below) between 1989 and 1993 due to the changeover from a 5 to a 10-year term license. All growth is coming at the No Code Technician level. For the 3rd year in a row there are less high speed (13-20 WPM) operators than the year before.

AMATEUR RADIO GROWTH OVER THE PAST TWENTY YEARS- DECEMBER 1, 1978 TO DECEMBER 1, 1998

Year	Extra	Advance.	General	Tech.+	Tech.	Novice	Total	Increase
1978	22204 6.3%	82860 23.5%	118363 33.5%	68508 19.4%		61227 17.3%	353162 100.0%	
1979	24160 6.7%	84959 23.5%	122747 33.9%	69076 19.1%		61313 16.9%	362255 100.0%	+2.6%
1980	26455 6.9%	88933 23.3%	124364 32.6%	70161 18.4%		72093 18.9%	382006 100.0%	+5.5%
1981	29603 7.3%	94174 23.2%	125848 31.0%	76715 18.9%		79677 19.6%	406017 100.0%	+6.3%
1982	31342 7.7%	94467 23.1%	119576 29.3%	75545 18.5%		87814 21.5%	408744 100.0%	+0.7%
1983	34264 8.3%	95590 23.3%	118191 28.8%	76799 18.7%		86035 20.9%	410879 100.0%	+0.5%
1984	35910 8.7%	97370 23.7%	116887 28.4%	80191 19.5%		80565 19.6%	410923 100.0%	+0.0%
1985	38305 9.3%	97781 23.6%	117082 28.3%	83387 20.2%		77087 18.6%	413642 100.0%	+0.6%
1986	40989 9.8%	97821 23.3%	115998 27.6%	85431 20.4%		79019 18.9%	419258 100.0%	+1.4%
1987	43608 10.1%	98383 22.8%	114396 26.5%	92618 21.5%		82296 19.1%	431301 100.0%	+3.1%
1988	46735 10.6%	98465 22.5%	112974 25.8%	100878 23.0%		78988 18.0%	438038 100.0%	+1.6%
1989	50070 10.7%	101904 21.8%	116944 25.0%	114507 24.4%		85022 18.1%	468447 100.0%	+6.9%
1990	53520 10.8%	105102 21.1%	119552 24.1%	126543 25.5%		92230 18.5%	496947 100.0%	+6.1%
1991	57174 10.6%	107485 19.9%	122462 22.7%	127024 23.6%	28344 5.3%	96711 17.9%	539200 100.0%	+8.7%
1992	60986 10.4%	109769 18.8%	124924 21.4%	129310 22.1%	60411 10.3%	98950 16.9%	584350 100.0%	+8.4%
1993	65049 10.3%	112785 17.9%	127185 20.2%	131638 20.9%	93883 14.9%	100098 15.9%	630636 100.0%	+7.3%
1994	67681 10.2%	114666 17.3%	128729 19.5%	134028 20.3%	120020 18.1% ^x	90060 13.6%	661509 100.0%	+6.7%
1995	72380 10.3%	117089 16.6%	129962 18.4%	139738 19.8%	149745 21.2%	97080 13.7%	705994 100.0%	+6.7%
1996	73518 10.3%	114404 16.1%	126714 17.7%	148341 20.8%	160590 22.6%	88192 12.4%	711759 100.0%	+0.8%
1997	75694 10.5%	112482 15.7%	124415 17.3%	147559 20.5%	179226 24.9%	79965 11.1%	719331 100.0%	+1.1%
1998	76611 10.7%	110340 15.4%	121673 16.9%	146051 20.3%	190058 26.5%	73518 10.2%	718241 100.0%	(0.2%)

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AMATEUR SERVICE CENSUS - INDIVIDUAL STATIONS - DECEMBER 1, 1997 vs. DECEMBER 1, 1998

State	Extra		Advanced		General		Tech Plus		Technician		Novice		Total		%
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	Inc.
AL	1191	1217	1681	1655	1769	1725	2283	2227	3259	3435	790	691	10973	10950	(0.2%)
AK	348	342	507	494	611	601	570	563	948	1036	345	323	3329	3359	+0.9%
AZ	1624	1682	2543	2534	2652q	2622	3096	3067	4655	4924	1027	961	15597	15790	+1.2%
AR	780	802	1052	1052	1053	1047	1342	1319	2190	2300	512	472	6929	6992	+0.9%
CA	9020	9085	15218	14783	15617	15146	22922	22483	32861	35097	14436	13531	110094	110125	+0.0%
CO	1320	1350	2091	2099	2073	2026	2454	2480	3012	3269	1071	989	12021	12213	+1.6%
CT	1137	1128	1461	1425	1805	1759	1801	1778	1634	1691	1381	1267	9219	9048	(1.9%)
DE	204	209	233	225	283	278	334	331	303	314	158	144	1515	1501	(0.9%)
DC	72	70	88	88	124	120	68	67	70	74	58	51	480	470	+2.1%
FL	4608	4708	7823	7722	9177	9096	8315	8300	8099	8475	5684	5233	43706	43534	(0.4%)
GA	1858	1678	2554	2521	2586	2555	3238	3242	3726	3972	1245	1173	15007	15141	+0.9%
HI	350	359	485	482	531	519	697	690	743	881	585	518	3391	3449	+1.7%
ID	369	389	601	598	716	722	800	810	1339	1482	315	301	4140	4302	+3.9%
IL	2699	2705	3971	3848	4531	4347	5011	4914	5466	5821	2834	2591	24512	24226	(1.2%)
IN	1556	1575	2327	2288	2702	2661	3571	3496	3879	4106	1660	1550	15695	15676	(0.1%)
IA	771	783	1380	1352	1397	1365	1235	1214	1377	1467	886	745	7046	6926	(1.7%)
KS	764	760	1137	1112	1501	1463	1526	1524	1962	2007	829	739	7719	7605	(1.4%)
KY	961	977	1205	1208	1454	1422	1853	1871	2655	2798	1005	948	9133	9224	+1.0%
LA	858	852	1293	1267	1308	1274	1465	1434	1789	1869	732	667	7445	7363	(1.1%)
ME	521	528	690	691	997	978	847	837	1048	1097	459	437	4562	4568	+0.1%
MD	1538	1549	2172	2139	2137	2067	2398	2385	2517	2608	1236	1143	11998	11891	(0.9%)
MA	2111	2123	2562	2467	3151	3023	3270	3224	2886	3078	1934	1815	15916	15730	(1.2%)
MI	2337	2381	3530	3442	4114	3998	4514	4470	5301	5621	2037	1890	21833	21802	(0.1%)
MN	1220	1247	1954	1919	2197	2155	2155	2151	2492	2628	1021	921	11039	11021	(0.2%)
MS	536	548	825	802	830	818	907	893	1372	1422	446	409	4916	4892	(0.5%)
MO	1510	1518	2159	2127	2525	2482	2486	2482	3303	3518	1216	1118	13199	13245	+1.9%
MT	331	331	477	474	570	563	542	5498	885	939	295	276	3100	3132	+1.0%
NE	409	413	742	722	918	899	809	810	828	893	390	351	4096	4088	(0.2%)
NV	461	496	711	719	842	849	862	880	1283	1380	314	298	4473	4622	+3.6%
NH	710	710	738	736	929	903	1067	1053	1130	1217	484	458	5058	5077	+0.4%
NJ	2250	2229	3019	2904	3277	3151	3676	3609	3135	3255	2196	2020	17553	17168	+0.0%
NM	618	617	9311	938	854	833	937	945	1678	1790	289	261	5307	5384	+1.5%
NY	3875	3847	5475	5281	6394	6190	7311	7152	7864	8233	5283	4786	36202	35489	(2.0%)
NC	2032	2092	2915	2915	3065	3034	3637	3685	4974	5269	1831	1763	18454	18758	+0.0%
ND	159	154	241	233	358	343	345	342	405	431	191	172	1699	1675	(1.4%)
OH	3301	3324	4789	4666	5383	5259	7683	7521	7831	8219	3332	3060	32319	32049	(0.8%)
OK	981	1002	1478	1423	1421	1385	1918	1901	2847	3000	894	827	9539	9538	+0.0%
OR	1343	1367	2133	2109	2642	2612	2684	2690	3212	3459	1250	1153	13264	13390	+0.9%
PA	3166	3179	4312	4244	4954	48730	5414	5368	5142	5399	2840	2608	25828	25628	(0.7%)
PR	301	308	582	577	804	816	2377	2292	883	949	3700	3219	8647	8161	(5.7%)
RI	353	355	348	340	502	491	619	594	436	458	349	302	2607	2540	(2.6%)
SC	771	808	1098	1096	1342	1345	1419	1413	1639	1759	559	521	6828	6942	+2.0%
SD	185	189	306	302	355	336	283	280	356	375	143	138	1628	1620	(0.1%)
TN	1598	1633	2317	2274	2299	2276	3215	3221	3733	3912	1192	1098	14354	14414	+0.4%
TX	5000	5091	7438	7329	7477	7309	8767	8708	11031	11654	3522	3217	43235	43308	+0.2%
UT	517	530	830	818	764	760	1741	1767	3547	3866	626	574	8025	8315	+3.6%
VT	269	281	323	308	418	407	423	419	634	666	190	183	2257	2264	+0.3%
VI	52	49	50	48	79	74	58	53	78	84	38	27	355	335	-5.6%
VA	2189	2199	3031	2981	3024	2972	3513	3527	3940	4257	1689	1550	17386	17486	+0.6%
WA	2530	25532	3733	3666	4395	4312	5208	5145	6750	7111	2484	2285	25100	25071	(0.1%)
WV	630	656	725	705	941	949	1296	1272	2224	2413	634	576	6450	6571	+1.9%
WI	1225	1246	1823	1809	2086	2036	2033	2027	2721	2908	1031	928	10919	10954	+0.2%
WY	190	197	228	226	287	276	307	306	476	505	161	137	1649	1647	(0.1%)
Other	182	191	147	134	192	196	257	268	656	666	156	103	1595	1558	(2.3%)
Total	75,694	112,482		124,415		147,559		179,226		79,965		719,331			
Total '98	76,611		110,340		121,673		146,051		190,058		73,518		718,241		(0.2%)
% Increase	+1.2%		(1.9%)		(2.2%)		(1.0%)		+ 6.0%		(8.1%)				
'97 %	10.5%		15.7%		17.3%		20.5%		24.9%		11.1%		100%		
'98 %	10.7%		15.4%		16.9%		20.3%		26.5%		10.2%		100%		

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CUTTING EDGE TECHNOLOGY

■ **Hertz has formed a joint venture with Magellan to equip 50,000 rental cars throughout the U.S., Europe and Canada with its "NeverLost" navigation system.** Customers simply input a local street address or they may choose from a range of destinations including hotels, airports, restaurants and other points of interest. Using the Global Positioning System (GPS) and map matching technology, the guidance system then provides turn-by-turn driving directions. Each unit is also equipped with an Emergency Location Button which displays the vehicle's exact location on a screen. Cost is an added \$6 per day.

COMPUTER INFO

■ According to "Trends and Forecasts for the New Millennium" **wearable computers with health monitors will be available** to screen your vital signs and offer real-time advice on diet, exercise, and stress reduction..

■ **The World Wide Wait is over** if you are in an area served by a cable modem. They are now available in many parts of the USA with speeds up to 100 times faster than a 28.8 dial-up. The @Home Network takes only 7 seconds to download a 1.5 MB file, while a 28.8 dial-up modem takes over seven minutes! (See: <<http://home.net>>) You will need a Pentium Class PC running Windows 95/98 with at least 16 MB of RAM (32 recommended) and 125 MB of free disk space. And like a cable-TV connection, they are always on so you never have to dial in to your ISP. Monthly fee is around \$30-\$50 plus a hefty installation fee (around \$100 to \$175.) Check out: <<http://www.catv.org/modem/isp>> to see if service is available in your area.

INTERNET NEWS

■ **First USA, a subsidiary of Bank One Corp. has agreed to pay Microsoft \$90 million** for the exclusive right for five years to advertise its VISA and MasterCard credit cards across most of the Microsoft Network (MSN.) The deal is the largest Internet advertising agreement ever signed. Microsoft said that one third of the nation's 51 million Internet users

regularly access an MSN site.

Audio and video programming site "broadcast.com" (formerly "AudioNet") also signed a multi-million dollar deal to advertise and market First USA credit cards exclusively on its Web site.

Consumer-to-business credit card transactions conducted over the Internet are currently running at \$3 billion a year.

■ **Home PCs still represent the dominant market segment of all PCs on the Internet.** According to Ziff-Davis (ZD), the number of personal computers connected to the Internet increased 35 percent in the first eight months of 1998. Thirty percent of all households, and 61 percent of households with PCs, are now on the Web. Internet penetration could approach 75 percent of PC households in the first half of 1999.

■ **More Web-based E-mail** - This is the third site launched in recent weeks that lets you check your conventional ISP e-mail through a Web browser. Just visit the site, enter your e-mail address and password and you are into your regular e-mail ...complete with the ability to read, delete and reply to messages. Check out: <<http://www.callme.com>>

■ **A CPA trade group says that rather than making our lives easier, technology may be making us more vulnerable.** The American Institute of Certified Public Accountants (AICPA) has issued its ninth annual top ten list of technology issues that worry CPAs. Topping this year's list are the Y2K bug, Internet issues, (including privacy, information security and controls, the transfer of electronic funds, and verifying the legitimacy of electronic transactions), and a general loss of privacy. Issues related to business management also made the list, including training in and managing technology, computer disaster planning and data recovery, and new methods of working, such as the "virtual office." Finishing the top-ten list were issues involving electronic money and electronic legal evidence.

■ **Internet Mutual Funds are going through the roof.** Mutual funds that invest solely in Internet stocks came into existence in 1996. There are only a handful of these funds. Larger fund companies have yet to jump in on this sector. Four funds that are devoted to Internet-related companies are:

"WWW Internet Fund"

(Symbol: WWIFX) year-to-date up 52.46% (through 12/18.) Website

at: <<http://webfund.com>>

"Munder NetNet Fund"

(Symbol: MMNAX) is up 76.3% YTD. <<http://netnet.munder.com>>

"The Internet Fund"

(WWWFX) up 153.87% YTD.

<<http://www.theinternetfund.com>>

"Monument Internet Fund" - New!

<<http://www.monumentfunds.com>>

A word of caution! These funds are **VERY volatile**, that is: very risky! There is no traditional relationship between underlying earnings and fund performance! Internet stocks don't make money (at least not yet.) But neither did Microsoft when it was just getting going just a little over two decades ago. Now Bill Gates is the world's richest man. And therein lies the reason for the Internet sector's rise. It's all wishful thinking, but worth watching!

■ **Search engines just keep getting more sophisticated!**

The newest is "iSleuth" — a publicly traded OTC company. With it, you can quickly search over 3,000 databases. It uses a secret new software platform developed by Inktonomi. You can even set the searching time. The new iSleuth Marketplace e-commerce service will provide access to over 200 online merchants and 500,000 products, encompassing 14 major product categories. Like others, iSleuth's objective is to become a "one-stop portal for Internet users." iSleuth can be found at <<http://www.isleuth.com>>

■ **Virginia might make "spamming" a crime!** — A Virginia commission on Internet use has endorsed legislation that would make "spamming" illegal and subject people who send the junk e-mail messages to criminal prosecution. The measure could become the first state law setting fines and prison terms for convicted spammers. In some states, spammers can be sued for damages in civil proceedings, but cannot be prosecuted.

■ **San Diego (California) is getting their Y2K work completed in Bombay, India!** The reason? When city hall computers shut down at night, the workday is just beginning in India. San Diego programmers oversee the work, but their counterparts in India make the actual code changes. The work is passed back and forth daily over the Internet.

WASHINGTON WHISPERS

■ In a letter to FCC Chairman William

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Kennard, thirteen executives from the technology industry have asked the FCC not to adopt any rules which specify how the high speed Internet should evolve. Instead, the Commission should let the industry develop the broadband networks. Consumers will get more choices for these services, far quicker, "If the commission maintains a 'hands-off' approach that trusts markets to determine how the emerging broadband networks will be built and utilized," the letter said.

The FCC is considering requests by America Online, telephone companies and consumer groups to impose regulations on cable giant Tele-Communications Inc.'s high-speed cable TV lines as a condition of TCI merging with AT&T Corp. The FCC and the Justice Department are reviewing the proposed \$48 billion merger to see if it would be good for customers and for competition.

Opponents of the merger want access to TCI's high-speed cable lines to offer competing Internet, cable and telephone services.

John Dingell, the highest-ranking Democrat on the House Commerce Committee, which has jurisdiction over the FCC, said federal regulators shouldn't force AT&T Corp. and TCI to take on new obligations as a condition for winning approval of their planned merger. "...the agency should look for ways to reduce regulations on companies, not increase them."

■ **Sony Electronics has recalled 60,000 dual-band (800-MHz and 1.9 Ghz) analog/digital cellular phones** that have the capability to exceed the maximum allowable radiofrequency (RF) power output when operated in the analog mode. "While the phones would have improved performance, they also might endanger the health of users," an FCC official suggested. The Government adopted more stringent guidelines for human exposure to RF from handheld devices in August 1996. Sony said that the excessive power output was unintentional -- that engineers misinterpreted the FCC's specification for maximum allowable power output. Some years ago, a Florida woman sued the cellular phone industry, charging that her husband's cellular phone led to his death from brain cancer.

■ **The future of high definition television (HDTV) depends upon who you are talking to.** Saying HDTV will fail, Forrester Research Inc. contends that SDTV (standard definition television) delivers the same benefits as HDTV, but

without the high-definition picture and high price. SDTV is HDTV's little brother. It uses a digital "progressive scanning" technology similar to that found in computer monitors to produce a picture that's sharper than today's analog (NTSC -- otherwise known as SSDTV: Sub-Standard Definition Television) which has "interlaced scanning." At 20 feet away, it is hard to tell a 30 or 40-inch SDTV from a HDTV.

Today's first-generation HDTV costs \$5,000 to \$10,000 each. Over time, prices drop. But Forrester predicts that HDTV sets will still cost at least \$2,000 ten years from now -- twice that of SDTV.

The report forecasts that only a million HDTV sets will be sold between now and the year 2003 and concludes that TV makers should concentrate on less sophisticated SDTV sets.

The *Consumer Electronics Manufacturers Association* (CEMA) sharply criticized the Forrester report. They say their research shows that 150,000 HDTV sets will be sold by the end of 1999; 600,000 in the year 2000 and that the first 10 million sets will be sold by 2003, the next 10 million in 2004 and 2005, and 10.8 million to be sold in 2006.

Broadcasters have already begun airing some programming in digital form but there are few sets in the hands of consumers to watch. By the year 2006, all TV stations in the United States must switch to digital broadcasting entirely. At that time, their analog TV channel is to be returned to the FCC for auctioning where it is expected to bring billions to the U.S. treasury.

■ A new FCC report shows that **DBS's (Direct Broadcast Satellite TV) market share among multichannel homes climbed to 9.4 percent** while cable's share in the TV market segment fell to 85 percent. The study also showed that DTH (Direct-to-Home) was adding subscribers at a faster rate than cable. A multichannel home is one that receives video other than by traditional (over-the-air) broadcasting. 78.2%, up from 75.9%, of all TV households are now multichannel.

In the year ended June 1998, 68% (55.4 million) of all TV households were on cable. DBS ended with 7.2 million subscribers, up from 5 million a year earlier. Large and small dish DTH has attracted about 10 percent of all TV households.

Cable rates increased by 7.3 percent in the year ending June 1998. The FCC said prices dropped and service improved in areas that had competing cable systems.

It is expected that the FCC will end cable rate regulation on March 31.

■ In related news, **Hughes Electronic Corp. (a unit of General Motors)** said it will acquire **U.S. Satellite Broadcasting Co., Inc.** for \$1.3 billion.

Hughes operates DirecTV which plans to expand its 185 channel programming lineup to 210 channels. Market leader DirecTV claims it now has 4.3 million subscribers; PrimeStar is second with 2.3 million; EchoStar's Dish Network is next with 1.8 million.

■ **The FCC has created a new page on Low Power FM (LPFM) radio broadcasting proposals on its Web site.** It covers the ongoing debate on whether the FCC should authorize future low power FM radio services for local communities.

Currently under review at the FCC is the potential licensing of stations at various low power levels that could meet the special needs of neighborhood-based community groups, schools and universities, religious groups or churches, minority groups, and small businesses, allowing these groups or businesses to use the public air waves to speak to their local and nearby communities.

The Web site includes information and links to:

- The current proceeding at the FCC whereby comments are being reviewed on petitions that had been received urging the FCC to open a *Notice of Proposed Rulemaking* on low power FM service, including links to the FCC *Public Notices* and the petitions.
- A speech by Chairman William Kennard to the *National Association of Broadcasters* Radio Convention on October 16, 1998.
- A speech by Commission Gloria Tristani to the *Texas Broadcasters Association* on Sep. 3, 1998, on local radio issues.
- A report by the *National Telecommunications and Information Administration* on Minority Commercial Broadcast Ownership in the U.S.
- Information on low power AM and FM broadcast stations from the FCC Audio Services Bureau webpage.

The website, located at <<http://www.fcc.gov/mmb/prd/lpfm>>, will be constantly updated.

■ **Nineteen more unlicensed (pirate) FM broadcast band radio stations have been shut down in the Miami, Florida, area** -- Acting in

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conjunction with the U.S. Marshals Service, the FCC seized equipment, via court order, that had been used to broadcast illegally in violation of Section 301 of the *Communications Act of 1934*.

Other agencies assisting in this action included the U.S. Attorney for the Southern District of Florida, Drug Enforcement Administration, U.S. Customs Service, U.S. Coast Guard, and local law enforcement officers.

A previous enforcement effort conducted in South Florida in July 1998 resulted in the seizure of equipment from 15 unlicensed stations. A follow-up investigation by the FCC resulted in the shut down of these 19 additional unlicensed stations.

The FCC said "Unlicensed radio transmissions can interfere with transmissions of licensed stations and have the potential to seriously interfere with aviation communications and emergency and public safety transmissions."

■ On Dec. 17th, the FCC privatized and streamlined its equipment approval procedures. As part of its 1998 Biennial Regulatory Review, the FCC has amended its RF equipment authorization rules to allow accredited private parties in the U.S. designated by the FCC to certify that RF devices meet its technical specifications. It also will designate parties in foreign countries to approve equipment as conforming the U.S. technical requirements.

The Commission noted certain equipment that uses radio frequencies must be approved by the FCC before it can be marketed. Allowing parties other than the FCC to certify that equipment complies with its rules will permit communications devices to be introduced more rapidly.

Because the number of equipment applications filed with the FCC will likely decrease, the Commission said it will redirect resources to enforcement of its rules.

(By Report & Order, Gen. Docket 98-68)

AMATEUR RADIO

■ This from Australia's "VK2News." DOTS DASHED! - The Australian Government operates a network of coastal radio stations to provide distress and safety radio services to ships at sea. Network stations are located at Sydney, Brisbane, Townsville, Darwin, Perth and Melbourne.

All Morse Code services from this network will cease at midnight Eastern Australian Summer Time on Jan. 31, 1999.

This includes the distress watch on the

international marine Morse Code channel of 500 kHz ...the frequency used by the RMS Titanic to send her mournful calls for help on that April night in 1912. Since that fateful night, thousands of ships in distress have used Morse Code on 500 kHz to alert other ships to their plight. Morse Code has saved the lives of thousands of mariners.

A special ceremony is being conducted at the Sydney coast radio station VIS at midnight on January 31 to commemorate the end of maritime Morse Code services.

During the ceremony, special commemorative Morse Code messages will be sent on 500 kHz between Australian coast radio stations and any ships at sea still using Morse.

■ On December 14, the FCC sent certified letters to Lawrence A. Repp Jr., N8HFN, of Gaylord, MI, Alan E. Quirle, KA8ZRR, of Royal Oak, MI and Steven A. Penn, KC8HUM, of Southfield, MI. Repp and Quirle were notified that their Advanced Class licenses were being downgraded to Technician Plus and Penn's new Tech Plus license grant was canceled.

FCC's Riley Hollingsworth said evidence shows that these applicants did not take the required license examinations at an ARRL/VEC Oak Park, Michigan exam session on June 3rd. Their names were added to examination session records and signatures forged, sometime after the tests were administered, by one of the four examiners who had obtained the package from the other three VEs to forward to the ARRL/VEC and filing with the FCC. "That examiner was the father of one of the examination candidates whose licenses were canceled or downgraded," Hollingsworth said.

The other three examiners knew nothing of the scheme and brought it to the ARRL-VEC's and FCC's attention after learning that names had been added to the examination records. Enforcement action is pending against the fourth examiner.

The FCC also dismissed two amateur applications in Puerto Rico after the applicants failed to answer questions put to them by the Commission. In the case of Jose R. Velez-Rivera, of Rio Pedras, an FCC official said it appears that an imposter tried to change another amateur's call sign, address, and date of birth to his own to get a license without taking an exam. In the second case, the FCC dismissed the renewal and General Class upgrade application of Hector A. Santiago, WP4DCB, of Camuy. An FCC official said it appears Santiago tried to renew as a General when he only had a Novice ticket.

■ The Associated Press reports that a judge has delayed the wire fraud trial of computer hacker Kevin Mitnick, N6NHG. U.S. District Judge Mariana Pfaelzer ruled that Mitnick's trial will begin April 20. It was originally scheduled to begin Jan. 19.

Mitnick has pleaded innocent to 25 counts of computer and wire fraud. He is accused of damaging computers, stealing millions of dollars in software from high-tech companies and using stolen computer passwords. He was on parole for other computer-related convictions when he allegedly went on a three-year hacking spree in 1992.

Mitnick was scheduled to be tried with Lewis De Payne KA6RBJ, but he could have a separate trial since De Payne is not in custody and his whereabouts are unknown. Mitnick has been jailed in Los Angeles since his 1995 arrest in North Carolina.

■ Now you can track ham satellites over the Web — Another cool site is J-Track Satellite Tracking from NASA. Using this home page, you can track your favorite orbiting objects, from spacecraft such as MIR and the Space Shuttle, to weather, amateur radio and research satellites. The full version lets you track just about anything in orbit but the most popular items are presented on the front page for quick access. <<http://liftoff.msfc.nasa.gov/realtime/jtrack>> Check it out!

■ The Dayton Amateur Radio Association is now accepting applications for their annual scholarships. Applicants must be graduating high school seniors in 1999. Applications available by sending a SASE to **DARA Scholarships, 45 Cinnamon Court, Springboro, OH 45066.** The deadline for application submission is June 15, 1999. (Stan Kuck, NY8F, DARA Scholarship Chairman)

■ The Foundation for Amateur Radio, Inc. (FAR), is also "...anxious to reach deserving licensed Radio Amateurs who are seeking additional education beyond high school." FAR, a non-profit organization with headquarters in Washington, DC will administer sixty-six scholarships for the 1999-2000 academic year. The awards range from \$500 to \$2500 with preference given in some cases to geographical areas or the pursuit of certain study programs. Additional information and an application form may be requested prior to April 30 from: **FAR Scholarships, PO Box 831, Riverdale, MD 20738.** (Hugh A. Tumbull W3ABC, Chairman, Scholarship Committee.)

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WT 98-143 REPLY COMMENTS CLOSE JANUARY 15TH

The comment period on the FCC's *Notice of Proposed Rule Making* (NPRM) on restructuring the Amateur Service ended on December 1st. Reply Comments (which close on January 15) respond to comments filed by other parties. You do not have to have previously filed comments to file Replies. And you can use the Commission's *Electronic Comment Filing System* (ECFS) to file Reply comments. This system is located on the World Wide Web at: <<http://www.fcc.gov/e-file/ecfs.html>>

You may also submit Reply Comments by electronic mail. To get filing instructions for e-mail comments, send an e-mail message to ecfs@fcc.gov and include the following words in the body of the message "get form <your e-mail address>." A sample form and instructions will be sent to you.

Following is a list of what we feel are the major comments to which you may wish to respond.

American Radio Relay League - The ARRL criticized the FCC for not including a comprehensive license restructuring proposal in their NPRM. The League said they had been studying the restructuring issue for the past two and a half years and inferred that their comments were the culmination of this long study.

No where in their comments is it mentioned, however, that the Directors voted at their January 16-17, 1998 annual meeting not to restructure the Amateur Service or to reduce the number of license classes or Morse code examination speeds.

The League proposal provides for four (instead of the current six) license classes ...and five examinations (instead of the current eight). The remaining classes would be Technician, General, Advanced and simply Extra Class. (It would no longer be called the Amateur Extra Class.) The entry level would be "Technician" achieved by passing a 35 question Element 2 examination which would be similar to the existing Element 3A. The Novice and Tech Plus Classes would be abolished with these amateurs automatically upgraded to the General Class.

An innovative feature would permit the Technician Class amateur to operate CW on the General Class high frequency subbands with a maximum 200 W PEP transmitter power level without first being examined. These subbands would be 3.525-3.700, 7.025-7.125, 10.100-10.150, 14.025-14.150, 18.068-18.110, 21.025-21.150, 24.890-24.930, or 28.000-28.300 MHz. The League's position is that licensees can't transmit CW without knowing Morse code.

The ARRL did not address the reality that two-way telegraphy contacts can (and are) made by using computer keyboards as is the case with all other digital modes ...or how the applicant would prove manual ("receive by ear") telegraphy proficiency as required by the international Radio Regulations.

The General Class would become the entry level for voice HF operation ...attained by additionally passing a 35 question Element 3 written and a 5 words-per-minute telegraphy examination. (Multiple choice code tests would be prohibited.)

Advanced Class applicants would be required to additionally pass Element 4 — a 40 question written examination similar in content to Element 4A — and 12 WPM code, Element 1(B). The justification that the ARRL gave for 12 WPM code testing was that it was "...a reasonable level of proficiency" for a full privilege license. The League agreed that Advanced Class VEs should be permitted to examine the General Class.

Extra Class applicants must additionally pass a new 50 question Element 5 (similar to the existing Element 4B) but no

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additional code test.

General, Advanced and Extra Class licensees would each receive additional phone spectrum at 80, 40 and 15 meters. The Technician and General Class written examinations would be more oriented towards "operating" with "technical" questions being emphasized in the Advanced and Extra Class examinations.

National Conference of VECs - The Volunteer Examiner Coordinators agreed with the FCC as to the decreasing role of Morse code in the Amateur Service and said that there is no longer any public interest served by requiring code testing. The VECs said they see no justification for high speed telegraphy examinations. "A single 5 WPM telegraphy examination meets the international treaty requirement and would eliminate the need to grant medical credit to disabled amateurs for the higher code speed examinations." The VECs pointed out that higher speed code examinations had been used in the past to limit the number of amateurs and to control frequency congestion.

The VECs believe that three license classes conferred by four examinations are needed. They suggested abolishing the Novice and Technician Plus licenses ...and combining the Advanced and Extra Class "since the primary difference ...is the 20 WPM code examination." The Novice and Advanced Class could be renewed but no new licenses would be issued. Technician Plus licenses would be renewed as Technician, but would carry credit for the 5 WPM Element 1A code.

The (no code) Technician Class would be the VHF/UHF-/Microwave entry level; the (5 WPM) General Class, the HF entry. Each would require passing a 50 question multiple choice examination. Amateurs would need to pass a 100 question multiple choice examination to upgrade to the Extra Class.

Existing question pools would be used. The new Element 3 would consist of questions taken from the Element 2 and 3A question pools. The Extra Class Element 4 examination would be prepared from the combined Element 4A and 4B question pools. The VECs also agreed that Advanced Class VEs should be permitted to administer the General Class license exams.

Courage Handi-Hams System (CHHS) - Headquartered in Minnesota, Handi-Hams has historically represented the disabled amateur. Therefore, their comments are particularly important. CHHS believes the high code speed disability waiver should be eliminated, while provisions must be in place to adapt the remaining slow code testing for people with severe disabilities.

Handi-Hams manager, Patrick Tice WA0TDA believes that by having a maximum code speed of 5 WPM, people with disabilities would not need to obtain a doctor's certification as part of a license application. He questions whether VEs with no medical experience are qualified to administer code examinations to the handicapped and whether high speed code testing is even needed for anyone. CHHS asks "...in the context of communications for the Twenty-First Century; is code proficiency a necessary and elemental skill for communicating on the high frequency bands."

CHHS feels that "...should a person with a disability challenge the requirement as irrelevant and arbitrary in light of the movement of all other HF services away from code, it would be impossible to defend fast code testing and the requirement would be vacated."

Quarter Century Wireless Association (QCWA) - recommended a reduction in the present six classes of amateur licenses to three: Technician (no code required), General (5 WPM) and Extra (12 WPM.) Novice and Technician Plus operators would be "grandfathered" to the General Class with Advanced Class licensees being "grandfathered" to the Extra Class. All Morse code examinations should require one full minute of perfect copy.

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Wayne Green W2NSD/1 - of 73 Magazine - has been licensed for 60 years and has "...done just about everything there has been to do in the hobby." He recommends only one license class. "I see no benefit to the hobby in the maintenance of six license classes."

On the code issue, "Let's stop trying to force people to do things and encourage them to build their skills because it's fun. The whip doesn't work for training animals or children, so let's stop using the code test to keep interested newcomers out of the hobby." If the code is necessary "The ability to receive Morse code at 5 WPM should satisfy the current ITU requirements."

"If the U.S. is going to be competitive in the 21st Century, we are going to need millions of high-tech career oriented youngsters. Amateur radio is a wonderful way to recruit youngsters and aim them at these careers."

Kenwood Communications - is one of the largest manufacturers of radio equipment in the U.S. They believe the licensing structure should be made more simple. CEPT (European) nations only recognize two license classes. By sharp contrast, Kenwood says "The United States, has unquestionably, the most elaborate, multi-licensing structure in the world."

Kenwood believes that there is a shortage of qualified RF engineers and technical professionals. "The Amateur Service has the capacity to self-educate those with an interest in RF technology. ...The licensing of persons proficient in Morse code is inconsistent with encouraging those interested in modern telecommunications to join the ranks of amateurs and to become skilled in the technical sciences. ...Burdensome examination requirements on topics not relevant to a person's interest in amateur radio or their ability to operate an amateur station should be eliminated."

Kenwood supports three license classes: Technician, General and Extra Class. Any greater speed [than 5 WPM] is unnecessary. [Telegraphy] is not a telecommunications skill used often in emergency communications or disaster relief..." Kenwood believes the Technician examination should be 35 questions.

Gordon West Radio School - Gordon West WB6NOA, a major license preparation materials developer and instructor, has been licensed for over 30 years. He has trained more U.S. ham operators than anyone. West also recommends three license classes: Technician, General and Extra Class.

"We are in full agreement that CW examinations have played too important a role in license and privilege upgrades." The General code test requirement should be 5 WPM. "We would recommend leaving the Extra Class code speed at 20 WPM."

"We also feel that present Technician no-code operators as well as Technician-Plus operators who have not taken the General written examination must take the General written examination to acquire the new General class privileges."

Jay Jackson, W4VG - is an FCC electronics engineer currently with the WTB's Commercial Wireless Division. Between 1978 and 1981, he was responsible for the amateur radio examination program. He suggests four license classes: "Basic" (no code, 25 exam questions), "Intermediate" (5 WPM, 25 questions), "Advanced" (50 technical questions) and the "Expert" class conferred by "...real-world achievement and contribution to the Amateur Radio Service rather than by testing." W4VG also believes that there is a disturbing "cultural disconnect" between the newcomers on the bands above 30 MHz and the "old-timers" on the bands below 30 MHz.

No Code International - (NCI) - is an international organization which supports the ending of all manual telegraphy testing in the Amateur Service. NCI believes that "...revitalization and realignment is absolutely necessary to assure that the ARS will be capable of meeting its public service and technical training objectives in the future."

The FCC "...has a compelling public interest mandate, both to maintain a healthy Amateur Radio Service, and to eliminate to the maximum extent possible, unnecessary or arbitrary rules that limit access to, full participation in, and freedom of experimentation in, the ARS."

NCI urges "...eliminating, to the maximum extent possible, Morse testing as a requirement for all amateur licenses; reducing the number of license classes to no more than three and reviewing the privileges afforded to each license class making certain that all test requirements for each license class rationally relate to the privileges the licensee received by virtue of passing the test."

"NCI further recommends and requests that the Commission direct the Wireless Telecommunications Bureau to commence a *Notice of Inquiry* seeking comment from the public on what portions of Part 97's technical and operational regulations constitute unnecessary barriers to technical advancement and experimentation in the ARS in light of today's technology."

CQ Communications - is a major publisher of amateur radio magazines, books and videos. CQ recommends "...replacing the current six classes of license with three, equivalent in operating privileges to the current Technician, General and Amateur Extra Class. Combine current Novice and Technician-Plus licensees into the new General Class and combine the current Advanced Class licensees into the new Amateur Extra Class."

"Replace the 5, 13 and 20 WPM code tests with either a single 5 WPM test for all license classes above Technician, or a two step system with 5 WPM for General and 10 WPM for Extra. Our preference is for a single 5 WPM exam..."

CQ additionally proposed a new "Basic Amateur Permit (BAP)" for use by school or hospital club stations and that expired operator licenses be used for element credit for the exam elements previously passed, if a former license holder wishes to reactivate his/her license and again become an active amateur."

Bob Vernali ZL2CA - is one of the six managers in the New Zealand-based *Organization Requesting Alternatives by Code-Less Examinations, Inc.*, (ORACLE.) Vernali says that the Morse code requirement is without a good reason "...technology and practices have moved on ...and telephony rather than telegraphy is the most used way of amateur telecommunication today."

Over the years, "...Morse code testing was mainly intended to be used as a restrictive practice to limit the number of participants on certain bands, while encouraging new usage on the higher bands that are under possible threat of shared use by other radio services. Sheltering the interests of incumbent licensees who have passed a Morse code test is discrimination without good reason when viewed from the public perspective."

ZL2CA suggested two license classes: "Basic" (with 80, 15, 10 and 2 meter access at lower power) and a General full power all band license." There is no need for any Morse code examination, as no Morse code proficiency is actually needed to access amateur spectrum. Freedom of choice in operating preferences rests with individuals." He called the granting of waivers to persons with disabilities "...a form of 'reverse discrimination'."

The role of amateur radio on influencing career paths that support telecommunications services should not be underestimated. ...A Morse code requirement is rather unconvincing to many young persons who are literate in computer and Internet matters."